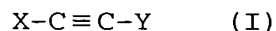


We claim:

1. A process for preparing organic alkyne compounds of the
5 formula I



by reacting organic halogen compounds of the formula Ia

10



with organic terminal alkyne compounds of the formula Ib

15



where X and Y are identical or different organic radicals

in inert solvents under the action of microwave energy,

20

in the presence of at least one metal compound and at least one base,

wherein Hal is chlorine or bromine.

25

2. A process as claimed in claim 1 which is carried out in the presence of at least one metal compound which comprises a metal selected from the group consisting of magnesium, calcium, strontium, barium, titanium, zirconium, hafnium,
30 iron, ruthenium, osmium, cobalt, rhodium, iridium, nickel, palladium, platinum, copper, silver, gold, zinc, cadmium and mercury.

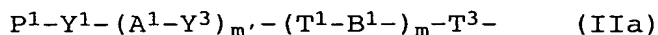
3. A process as claimed in claim 1 which is carried out in the presence of a copper compound.
35

4. A process as claimed in any of claims 1 to 3, wherein X and Y are identical or different and are each organic radicals which contain saturated or unsaturated carbo- or heterocyclic radicals where both -Hal and H-C≡C- are bonded directly to
40 said saturated or unsaturated carbo- or heterocyclic radicals.

5. A process as claimed in any of claims 1 to 3, wherein
45

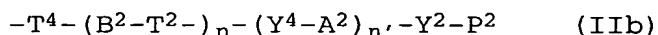
X is a radical of the formula IIa

14



and

5 Y is a radical of the formula IIb



where

10

P^1 and P^2 are each independently hydrogen, C_1 - C_2 -alkyl, a polymerizable group, a group suitable for polymerization or a radical which carries a polymerizable group or a group suitable for polymerization,

15

or

20

P^1 and/or P^2 each corresponds to a radical $P^{1'}$ and/or $P^{2'}$ which denotes a precursor group which is stable under the reaction conditions which can be reacted to give or be substituted by the corresponding polymerizable group or group suitable for polymerization P^1 and/or P^2 or the radicals P^1 and/or P^2 which carry a polymerizable group or a group suitable for polymerization,

25

Y^1 , Y^2 , Y^3 and Y^4 are each independently a single chemical bond, -O-, -S-, -CO-, -CO-O-, -O-CO-, -CO-N(R)-, -(R)N-CO-, -O-CO-O-, -O-CO-N(R)-, -(R)N-CO-O- or -(R)N-CO-N(R)-,

30

B^1 and B^2 are each independently a single chemical bond, -C \equiv C-, -O-, -S-, -CO-, -CO-O-, -O-CO-, -CO-N(R)-, -(R)N-CO-, -O-CO-O-, -O-CO-N(R)-, -(R)N-CO-O- or -(R)N-CO-N(R)-,

35

each R is, independently and irrespective of the meaning in each of Y^1 to Y^4 , B^1 and B^2 , hydrogen or C_1 - C_4 -alkyl,

40

A^1 and A^2 are each independently spacers having from 1 to 30 carbon atoms,

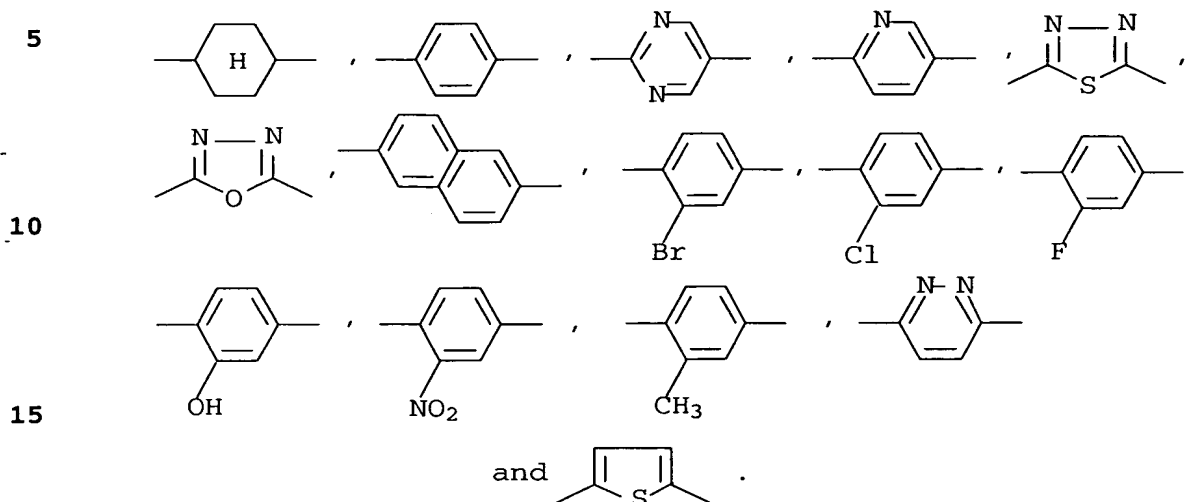
T^1 , T^2 , T^3 and T^4 are each independently bivalent, saturated or unsaturated, carbo- or heterocyclic radicals and

45

m' , m , n' and n are each independently 0 or 1.

15

6. A process as claimed in claim 5, wherein the T¹ to T⁴ radicals in the formulae IIa and IIb are selected from the group consisting of



7. A process as claimed in any of claims 1 to 6, wherein the
20 inert solvent used is dimethylformamide or N-methylpyrrolidone or a mixture of the two.
8. A process as claimed in any of claims 1 to 6, wherein the
25 inert solvent used is dimethylformamide.
9. A process as claimed in any of claims 1 to 8, wherein the at
least one base is a compound selected from the group
consisting of alkali metal carbonates, alkali metal
phosphates and tri(C₁-C₄-alkyl)amines.
- 30
10. A process as claimed in any of claims 1 to 8, wherein the
base used is at least one alkali metal carbonate.
11. A process as claimed in any of claims 1 to 8, wherein the
35 base used is potassium carbonate.

40

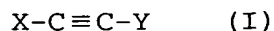
45

Preparation of organic alkyne compounds

Abstract

5

The present invention relates to a process for preparing organic alkyne compounds of the formula I



10

by reacting organic halogen compounds of the formula Ia



15 with organic terminal alkyne compounds of the formula Ib



where X and Y are identical or different organic radicals and Hal
20 is chlorine or bromine, in inert solvents under the action of
microwave energy, in the presence of at least one metal compound
and at least one base.

25

30

35

40

45